

Proposal for Funding to Sierra Nevada Conservancy

Big Meadows Stream Restoration

2.) Project Summary:

This request is for the monitoring portion of a stream restoration project. The benefits of the project are key to the restoration phase which took place in October, 2007.

We have restored 6,800 feet of degraded stream within Big Meadows in Sequoia National Monument. This will enhance aquatic species and terrestrial habitat and reduce non-source point pollution downstream while maintaining existing land uses including recreation and grazing. The project used a restoration technology called “pond and plug,” which eliminates the existing downcut channel and redirects stream-flow back into stable, historic remnant channels on the meadow surface. The project is providing the following ecosystem benefits: 1) establishing a single-thread channel, low flow channel by redirecting Big Meadows Creek into its original historic channel, 2) reducing flow peaks and increasing/extending summer baseflows, 3) increasing in-stream cover and shading, 4) enhancing aquatic and terrestrial habitat, 5) improving water quality, and 6) raising the local groundwater level within the meadow. Previous to this work we collected data on ground water levels, flow levels and temperature for approximately three years. We funded testing on many levels, and a Master’s Thesis was produced from this work (The Olin Thesis).

Our current proposal is a request for funding the post-project monitoring. This will utilize all past data, and data into the next three years to determine the success of our intervention. Monitoring includes a datalogger, already installed with a pressure transducer. We will take flow measurements to establish the scale of the area so that our data is useful. Monthly we will walk every inch of the stream, visually inspecting the banks and vegetation. We will take pictures monthly at photopoints, and read the piezometers established throughout the restoration site. We are also proposing two studies in collaboration with the Forest Service and CSUS. These will be to monitor wildlife returning to the area, and the new “ponds” developing their ecological systems.

This work is crucial as this is the first time “pond and plug” has been used in this area of the Sierras. There are concerns from stakeholder groups that might block other planned projects by the Forest Service to repair meadows with the same technology. Also proposed is a class specifically for local watershed professionals using Big Meadows as a demonstration site. There are several agencies that have expressed an interest in this. We hope to spread the understanding of this technology in this part of the Sierras, and develop a community of meadow restoration experts locally.